

U.S. Army – Baylor University
Graduate Program in Healthcare Administration

Texas Children's Bicycle Helmet Bill Analysis

A Graduate Management Project Proposal Submitted to the Program Director in Partial
Fulfillment of Requirements for the Degree of Master's in Health Administration

May 2002

By

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Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE MAY 2002		2. REPORT TYPE Final		3. DATES COVERED Jul 2000 - Jul 2002	
4. TITLE AND SUBTITLE Texas Childrens Bicycle Helmet Bill Analysis				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Major Dana G. Venenga, USAF				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Greater San Antonio Hospital Council San Antonio, TX				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) US Army Medical Department Center and School Bldg 2841 MCCS-HRA (US Army-Baylor Program in HCA) 3151 Scott Road, Suite 1412 Fort Sam Houston, TX 78234-6135				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S) 34-02	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT Each year over 600,000 people are treated in emergency departments (ED) for bicycle-related injuries. Nationwide, over eight hundred Americans die annually from this type of injury. Children account for 450,000 of these ED visits and an average of 400-600 of bicycle accident deaths annually (Centers for Disease Control and Prevention, 2001). Head injury is the most common cause of death and serious disability in bicycle-related crashes; head injuries are involved in about 60-80 percent of the deaths, and 30 percent of the bicycle-related ED visits. Preventable deaths of children, and associated emotional and financial costs, are major problems for American society. The purpose of this Graduate Management Project was to objectively step through the entire policy making process as it applies to determining ways to mitigate traumatic brain injuries or deaths of children who are involved in bicycle accidents; and to prove my hypothesis that a Texas childrens bicycle helmet law is the best alternative for mitigating the accidental death of children who received traumatic brain injuries resulting from an accident. The end goal is to improve children's bicycle riding safety through a mandated Texas helmet use policy.					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 42	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

ACKNOWLEDGMENTS

Several people have been extremely helpful in the completion of the Texas Children's Bicycle Helmet Bill Analysis. Colonel (select) James Meyers, DrPH, from the U.S. Army Baylor University Graduate Program in Healthcare Administration has been critical to the success of this project from its inception. Dr. Meyers suggested turning my desire to introduce Texas children's bicycle helmet bill into a complete policy analysis project. He has also provided thorough review of my progress and insightful suggestions for improving this project.

Colonel (Retired) William Rasco, President/CEO of the Greater San Antonio Hospital Council, has also had a tremendous impact on this project. In addition to allowing ample time during the residency year to complete this project and tremendous support, he also provided the direct points of contact with local Texas State senators and representatives who will be instrumental in turning this bill into a law.

My wife, Cynde, and girls, Brianna and Serena, have also been extremely helpful and supportive during the tenure of this project, despite the time spent away from home required to accomplish it.

Abstract

Each year over 600,000 people are treated in emergency departments (ED) for bicycle-related injuries. Nationwide, over eight hundred Americans die annually from this type of injury. Children account for 450,000 of these ED visits and an average of 400-600 of bicycle accident deaths annually (Centers for Disease Control and Prevention, 2001). Head injury is the most common cause of death and serious disability in bicycle-related crashes; head injuries are involved in about 60-80 percent of the deaths, and 30 percent of the bicycle-related ED visits. Preventable deaths of children, and associated emotional and financial costs, are major problems for American society. The purpose of this Graduate Management Project was to objectively step through the entire policy making process as it applies to determining ways to mitigate traumatic brain injuries or deaths of children who are involved in bicycle accidents; and to prove my hypothesis that a Texas children's bicycle helmet law is the best alternative for mitigating the accidental death of children who received traumatic brain injuries resulting from an accident. The end goal is to improve children's bicycle riding safety through a mandated Texas helmet use policy.

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1. INTRODUCTION

Each year in Texas, approximately 18 children are killed due to bicycle accidents. Approximately 60-80 percent of bicyclist deaths are because of severe head injuries received during an accident (Texas Department of Health Safe Riders Program, 2001). Use of a bicycle helmet could potentially save a majority of the children who die because of accident-related head injury. I believe that a children's bicycle helmet law will have a dramatic, positive effect on decreasing the number of lives lost and decreasing the number of traumatic brain injuries. The purpose of this Graduate Management Project (GMP) is to step through the entire policy making process as it applies to developing a Texas children's bicycle helmet bill. The culminating work of this GMP is to develop a children's bicycle helmet bill in preparation for presentation to the 2003 Texas State Legislative Session.

My residency site is the Greater San Antonio Hospital Council (GSAHC). GSAHC is a not-for-profit trade association dedicated to improving the health status of the communities served by its members in 27 counties in South Texas and is the leading catalyst for collective action in advocacy, education and the development of programs, products and services for its members (www.gsahc.org). An administrative residency at GSAHC provides valuable interaction with San Antonio hospital system chief executive officers, hospital administrators, and executive directors of related health care companies. The Bexar County judge, San Antonio mayor, and federal and state elected officials also provide avenues for accomplishing health policy agendas.

Crucial to successful accomplishment of performing a policy analysis on the issue of children's bicycle helmet safety are the abilities to work closely with a wide range of people, clearly organize thoughts, and accurately translate thoughts and research into a well-developed document. Fortunately, skills such as these are learned through working with classmates and

faculty and writing numerous research papers during the academic year of the U.S. Army-Baylor Graduate Program in Healthcare Administration. Classes taken during the past year such as Health Policy, Organizational Development, Strategic Planning and Human Resource Management will also be extremely helpful in working with diverse social advocacy groups throughout Texas in analyzing the issue of a children's bicycle safety.

a. Conditions Which Prompted the Study

The preventable death or traumatic brain injury to even one child is too many. As stated previously, I believe a Texas-wide approach in development of a children's bicycle helmet law must be implemented to prevent further needless death, injury, and heartache.

On August 17, 2001, Jessica M. Dixon, age 13, of San Antonio, Texas, passed away following a traumatic automobile-bicycle accident. Jessica was an honor student and had recently received a Citizenship Award from Krueger Middle School. Evidently, Jessica rode her bicycle into the path of an oncoming car. Jessica wasn't wearing a bicycle helmet (San Antonio Express News, 18 August 2001).

Tragically, Jessica was only one of the approximately 400-600 children who lose their lives in bicycle accidents each year in the United States (Children's Bicycle Safety Fact Sheet). As stated in the Introduction, 18 children died from bicycle-related injuries in Texas in 1998. At least half of these children who died suffered from traumatic brain injury, most likely the result of not wearing a helmet (Texas Department of Health Safe Riders Program, 2001).

In addition to the personal anguish resulting from the injury or death of a child, emergency room costs, the rehabilitative costs, and the insurance costs of treating victims of bicycle accidents are staggering. Nationwide, the costs associated with each injured bicyclist average \$1,098. The costs associated with each bicyclist death average \$231,357. The lifetime costs for

a severely head-injured bicyclist average more than \$4.5 million dollars (Children's Bicycle Safety Fact Sheet, 2001).

The number of senseless deaths of children in bicycle accidents across the United States, Texas in particular, leads me to believe that this is one of the major preventable problems in America today.

b. Statement of Problem

Can a Texas children's bicycle helmet law reduce the likelihood of childhood death and traumatic brain injury secondary to bicycle accidents? As responsible adults, it is our duty to take whatever steps are necessary to increase the safety of our children. I hypothesize that implementing a mandatory children's bicycle helmet law in Texas will help save the precious lives and futures of Texas children.

2. METHOD AND PROCEDURES

As stated earlier, I believe that mandated wear of bicycle helmets for children will have a significant effect on lives saved in the event of an accident. Given this hypothesis, the purpose of this GMP is to step through the entire policy making process as it applies to developing a Texas children's bicycle helmet bill. This GMP will show that a bicycle helmet law is the best alternative and that the end goal of improving children's bicycle riding safety is best served through a mandated Texas helmet use policy. Inherent in completing this goal are the study of background rationale and a comprehensive literature research to determine if current helmet laws in other states actually result in saved lives or decreases in traumatic brain injury. There may be tradeoffs to be made in developing a bill when considering the opinions of opponents to a Texas children's bicycle helmet law. I will conclude with a proposed methodology for presenting and supporting a proposed bicycle helmet bill for presentation to the Texas 2003 State Legislature.

I will use the book, The Eight-Step Path to Public Policy Analysis, by Eugene Bardach, to guide my policy making approach. Mr. Bardach is a broadly based political scientist with wide ranging teaching and research interests. He focuses primarily on policy implementation and public management. Mr. Bardach has co-taught the first-year policy analysis workshop at the University of California, Berkeley, since 1973. Mr. Bardach has directed and taught in training programs for higher-level public managers and has worked for the Policy Analysis office of the U.S. Department of Interior (<http://ist-socrates.berkeley.edu/~gspp/people/faculty/bardach.htm>). The following is a brief summary of Mr. Bardach's eight steps to policy analysis.

1) Define the Problem – Defining the problem gives a reason for doing all the work necessary to complete the project and provides a sense of direction for evidence-gathering activity. A society's "problems" are usually the fuel for much political and social rhetoric. This rhetoric may be narrowly defined as a technical problem affecting few individuals, or broadly defined as a controversial issue with wide social interest. It is important to postulate a problem that is manageable, both quantitatively and qualitatively, and is likely to be accomplished in light of the political and institutional climate of the issue (Bardach, 1996).

2) Assemble Some Evidence – A major part of policy analysis is gathering data that can be turned into evidence. Evidence is the information that affects the existing beliefs of people about significant features of the problem being studied and how it might be solved or the situation can be improved. It is important to try to collect only data that can be turned into information and evidence that is pertinent to the problem (Bardach, 1996).

3) Construct the Alternatives – It is important to develop alternative courses of action or "fallback" positions. The person doing the policy analysis should make a list of all alternative

actions or policies that they might want to consider in the course of their analysis (Bardach, 1996).

4) Select the Criteria – Bardach says that it helps to think of any policy story as having two interconnected, but separate plot lines. Every policy story has the analytical plot line and the evaluative plot line. The analytical plot line is all about facts and non-emotional projection of consequences. The evaluative plot line is about subjective value judgments and social philosophy. The Select the Criteria step focuses on the evaluative plot line. The criteria defined are evaluative standards used to judge the “goodness” of projected policy outcomes (Bardach, 1996).

5) Project the Outcomes – For each of the alternatives listed under Step Three – Construct the Alternatives, project all reasonably possible outcomes that could conceivably happen and have an impact on your area of interest. Projected outcomes should cover both positive and negative results. It is important to not only look at the general direction of the outcome, but also the magnitude of the outcome. Policy analysts should try to quantify projected outcomes (Bardach, 1996). I will endeavor to quantify the savings from a Texas children's helmet bicycle law, both in injuries/deaths and the cost of treating those injuries/deaths.

6) Confront the Tradeoffs – Very rarely will only one of the policy alternatives under consideration produce a better outcome with regard to every single evaluative criterion compared to other policy alternatives. Quite often, the tradeoffs between outcomes associated with different policy options must be clarified for the policy makers and concerned individuals. Usually, a balance between money spent and a good or service offered is the most common tradeoff (Bardach, 1996).

7) Decide! – At this point the policy analyst should put himself in the decision-maker's chair and decide if the case for a specific alternative has been proven. In other words, the policy maker needs to sit back, weigh the evidence, and decide if it makes a compelling case for a recommended alternative. If the policy analyst cannot convince himself of a particular course of action, he probably cannot convince a client or a body of lawmakers (Bardach, 1996).

8) Tell Your Story – After going through the previous seven steps, perhaps several times, the policy analyst should be ready to tell their story. They should be able to convince their client or a lawmaking body that a particular alternative deserves to be considered to become public policy, a regulation, or a law (Bardach, 1996).

3. DISCUSSION

In this section I will use The Eight-Step Path of Policy Analysis to analyze the problem of Texas children's injuries and deaths and develop a proposition for a solution to the problem.

a. Define the Problem

The overall problem was previously defined in the Introduction paragraph. Primarily, the tragic, but preventable, death of 11 to 13 Texas children who were not wearing a bicycle helmet at the time of a bicycle accident is a serious problem. The purpose of this GMP was to objectively step through a review of a typical policy making process as it applies to determining ways to mitigate traumatic brain injuries or deaths of children who are involved in bicycle accidents. I believe a law requiring Texas children ages 15 and under to wear a bicycle helmet when riding a bicycle will save children's lives, save the unbearable grief of family and friends, save significant taxpayer dollars, and is the best policy alternative to reach this goal.

b. Assemble Some Evidence

United States Bicycle Accident Statistics. Bicycle riding is an extremely popular American past time. According to the Centers for Disease Control and Prevention, an estimated 66.9 million Americans ride bicycles and about 29 percent of all U.S. households have one or more bicyclists. Out of the 66.9 million total bicyclists, children account for more than 33 million of them (Centers for Disease Control and Prevention, 2001).

Not practiced safely, bicycling can also be very dangerous. More than 46,000 bicyclists have died in traffic crashes in the U.S. since 1932. Nationally, bicyclists ages 14 and under are at five times greater risk for injury than older bicyclists (State Legislative Fact Sheets, 2001).

Unfortunately, each year over 600,000 people are treated for bicycle-related injuries in emergency departments (ED). Nationwide, over eight hundred Americans die annually from this type of injury. Children account for 450,000 of these ED visits and an average of 400-600 of bicycle accident deaths annually (Centers for Disease Control and Prevention, 2001). This death toll for children exceeds the *combined* child death rate from accidental poisonings, falls and firearm injuries to children (Children's Bicycle Safety Fact Sheet, 2001).

Head injury is the most common cause of death and serious disability in bicycle-related crashes; head injuries are involved in about 60-80 percent of the deaths, and 30 percent of the bicycle-related ED visits. In addition, many of the nonfatal head injuries produce lifelong disability from irreversible brain damage (Centers for Disease Control and Prevention, 2001).

Additional information from the Troxel Cycling & Fitness Company supports the statistics about bicycle injuries among children. Troxel says that children account for over 70 percent of all bicycle-related injuries treated in ED's and 50 percent of all fatalities (Troxel Cycling & Fitness, 2001). According to the report, Supporting a Macro-Approach to Increase Bicycle

Helmet Use Among Low Income and Rural Populations, head injury is the primary or contributing factor in 70-85 percent of bicycle related deaths (White and Spellicy, 1994). The Bicycle Helmet Safety Institute says that bicyclists admitted to the hospital with head injuries are 20 times more likely to die as those without head injuries (Bicycle Helmet Safety Institute, 2001). The Family Caregiver Alliance Fact Sheet on Selected Head Injury Statistics states that long-term disabilities are experienced by 70-90 percent of individuals suffering mild head injuries. Almost all head injury victims report verbal problems and 59 percent have impaired memory (Family Caregiver Alliance, 2001).

Even if a person is fortunate enough to fully recover from one traumatic brain injury, the chances of them receiving another traumatic brain injury rise considerably. After one traumatic brain injury, the risk for a second traumatic brain injury is three times greater. After a second traumatic brain injury, the risk for a third traumatic brain injury is eight times greater (Think First Fact Sheets, 2001).

Texas Bicycle Accident Statistics. In 1995, Texas averaged over six million bicycle riders. Of these riders, nearly one million were children between the ages of 5 and 14. Sadly, 1,224 bicyclists under the age of 15 were injured in non-fatal bicycle accidents in 1998. As previously stated, 18 of these children died in fatal bicycle mishaps. Statistically, 70-85 percent of these deaths were due to head trauma. One hundred and twenty-four Texas children sustained a traumatic brain injury in 1998. Among children who sustained a traumatic brain injury and data were available regarding helmet usage, 87 percent were not wearing a helmet at the time of injury (Texas Department of Health Safe Riders Program, 2001).

United States Bicycle Accident/Death Costs. In addition to the emotional cost to Americans who lose a child to death or permanent disability; the financial costs of bicycle head

injuries and deaths can also be devastating. According to the paper, Bicycle Helmet Laws, studies confirm that bicycle accidents and deaths cost \$7.6 billion dollars a year in U.S. health care costs (Casale and McCauley, 1996). The overall yearly economic costs of bicycle injuries to children nationally are in excess of \$1 billion dollars (Troxel Cycling & Fitness, 2001). As stated in the Introduction, the costs associated with each bicyclist death average \$231,357. The lifetime costs for a severely head-injured bicyclist average more than \$4.5 million dollars (Children's Bicycle Safety Fact Sheet). In fact, the Family Caregiver Alliance Fact Sheet on Selected Head Injury Statistics states that for an individual, the lifetime costs for care of a head injury survivor are estimated to be between \$4.1 million dollars and \$9 million dollars. In terms of acute care, the average hospital stay for a patient with a severe head injury is about 45 to 60 days at a cost of \$324,000 per person. The annual costs after the patient has left the hospital continue to remain very high. On average, post-hospital rehabilitation services cost \$125,000 per year, and may be required for several years (Family Caregiver Alliance, 2001).

Texas Bicycle Accident/Death Costs. In 1997, there were 61 deaths among pedal cyclists and 1,202 injuries reported for 515 individuals in Texas. Of these 515 injured individuals, 167 sustained a traumatic brain injury. Seventy percent of injured bicyclists were discharged in good condition, 20 percent were discharged in moderate condition, and 10 percent were discharged with a severe disability or in a vegetative state. The total hospital charges for just the injured 515 people were \$4,505,721 dollars (Texas Department of Health Injury Epidemiology and Surveillance Program, 2001). The Texas Department of Health Safe Riders Program reports that total hospital charges for 72 of the 124 children who received a traumatic brain injury from a bicycle accident in 1998 were \$800,000 (Texas Department of Health Safe Riders Program, 2001).

Safety Advantages of Wearing Bicycle Helmets. While these cost figures above are important, the most important realization should be that these cost figures represent injured people. The numbers don't reveal the tragedy of the loss of quality of life for the injured or their families, the often life-long impact of traumatic injuries, and the personal and family impacts.

In spite of the evidence of the hazards of not wearing a bicycle helmet, reported percentages of bicycle helmet use are extremely low. While percentages of people wearing helmets vary according to geographic location and socio-economic status, most studies list the percentage of people wearing helmets at anywhere between 5 percent and 18 percent. Some disadvantaged areas report bicycle helmet usage can be as low as 1 percent for children (Martin and Spellicy, 1994).

Numerous studies report that bicycle helmet usage is tremendously successful at decreasing the likelihood of traumatic head injuries to bicyclists, usually between 80-88 percent. The Bicycle Helmet Safety Institute states that helmets decrease the risk of head injuries by 85 percent (Bicycle Helmet Safety Institute, 2001). The Family Caregiver Alliance Fact Sheet states that bicycle helmet usage decreases the risk of head injury by 88 percent (Family Caregiver Alliance, 2001). Another study reports that bicycle helmets are 85-88 percent effective in mitigating head and brain injuries, making the use of helmets the single most effective way to reduce head injuries and fatalities resulting from bicycle crashes (State Legislature Fact Sheet, 2001).

The National Bicycle Safety Network reports that universal helmet use could prevent an average of 500 bicycle-related deaths each year (National Bicycle Safety Network, 2000). Safety experts calculate that universal helmet use would prevent more than 60 percent of bicycle-related deaths (University of New Hampshire Cooperative Extension, 2001). Another study that

examined bicycle-related head injuries and death in the United States from 1984 through 1988, predicted 2,100 deaths and 650,000 head injuries may have been prevented if all cyclists were wearing helmets at the time of the crash (White and Spellicy, 1994).

According to Jeffrey Sacks of the Division Injury Control in Atlanta, if only 50 percent of the cyclists had worn helmets, more than 1,000 bicycle-related head injuries and deaths could have been prevented over the last three years. If all the cyclists wore helmets, more than 2,500 deaths could have been prevented in the last three years. Bob Baum, a reporter for The Seattle Times, reports that the number of head injuries to children under 16 dropped significantly after Washington's mandated helmet law took effect in June, 1994 (Casale and McCauley, 1996).

In addition to saving lives, universal bicycle helmet use by children ages 4 to 15 would prevent 39,000 to 45,000 head injuries, and 18,000 to 55,000 scalp and face injuries annually (State Legislature Fact Sheet, 2001). Lastly, it is estimated that if all bicyclists in the U.S. wore helmets, one bicycle related death would be prevented each day and one head injury would be prevented every 4 minutes (Troxel Cycling and Fitness, 2001).

Several U.S. states have already implemented bicycle helmet laws as part of comprehensive bicycle safety programs and have had tremendously positive results. Pennsylvania is one of the 20 states that currently have a children's bicycle helmet law in place. Pennsylvania requires children under the age of 16 to wear a helmet. Twelve months after the law went into effect, the number of bicycle deaths dropped 10 percent across the state (Casale and McCauley, 1996).

New York State reports that since it introduced a helmet law in 1994 for riders under 14, the annual rate of bicyclists hospitalized from bicycle related traumatic brain injuries has fallen for the under 14 group from 464 in 1990 to 209 in 1995. New Jersey reported in July of 1997 that since it introduced a helmet law for kids under 14, the number of bicycle related fatalities for that

group fell by 60 percent, from 41 in 1987-1991 to 16 in 1992-1997. In Florida, Duval County reported that after passed a bicycle helmet law in 1997, bicycle deaths fell from five to one, and injuries fell from 325 to 105 (Bicycle Helmet Safety Institute, 2001).

Financial Advantages of Wearing Bicycle Helmets. Wearing bicycle helmets also makes fiscal sense for Americans. States with helmet laws have 45 percent lower public costs from bicycle accidents compared to those states without helmet laws. Experts believe that these costs could be reduced by 80 percent if bicycle helmet laws were mandated in every state (Casale and McCauley, 1996).

Data from 1998 collected by the New Hampshire Emergency Medical Services Division show a \$7,000 dollar differential in medical costs between a cyclist injured while wearing a helmet and one who wasn't. A health maintenance organization or other organization genuinely concerned with saving health care dollars could purchase 1,000 bicycle helmets for \$7,000 (University of New Hampshire Cooperative Extension, 2001). The Texas Trauma Registry states that every dollar spent on bicycle helmets saves \$30 in direct health care costs (Texas Trauma Registry, 2001).

Additional Advantages of Wearing Bicycle Helmets. In addition to saving debilitating injuries, deaths, and exorbitant health care costs, the use of bicycle helmets also adds an unexpected benefit. The study, Observational Evaluation of Compliance with Traffic Regulations Among Helmeted and Nonhelmeted Cyclists, found that bicyclists who wear helmets are also safer riders. The study concluded that helmeted bicycle riders showed a significantly greater compliance with two traffic laws than nonhelmeted bicyclists. Helmeted riders were 2.6 times more likely to stop at stop signs and 7.1 times more likely to use legal hand

signals. This very strong association of helmet use with safer riding habits has implications for injury-control efforts aimed at preventing bicycle-related injuries (Farris et al., 1994).

There is also ample proof that state children's bicycle helmet laws actually accomplish their intended purpose of increasing helmet usage. Measurable increases in helmet use have resulted from the implementation of helmet laws. For example, in California where the program targeted low-income school children in one city, helmet use increased from 22 percent in 1994 to 64 percent in 1996. In Rhode Island, where a law was passed requiring children 8 years old and younger to wear bicycle helmets, helmet use in this age group increased from 11 percent to 27 percent in the three intervention communities. Washington State targeted 3-5 year-old children in the Head Start Program. The project distributed more than 11,000 helmets, and observed helmet use increased from 41 percent to 91 percent (Centers for Disease Control and Prevention, 2001).

Unfortunately, just passing mandatory children's bicycle helmet laws is not enough to fully protect American children from injuries and death from bicycle accidents. Although mandated laws have increased helmet use, resulting in decreased head injuries and deaths especially among the youngest children, public and local officials can help reduce bicycle head injury rate even more. First, states that have been slow to mandate helmet laws must be encouraged to mandate helmet laws as quickly as possible. Secondly, parents can enforce the law by making sure their child wears a helmet while riding a bicycle. Thirdly, police officers should launch an aggressive campaign to issue citations to bicyclists who fail to wear helmets. Finally, communities should provide children with basic educational programs on safety (Casale and McCauley, 1996).

c. Construct the Alternatives

The third step in Bardach's eight steps of policy analysis is to construct the alternatives.

Bardach states that alternatives are actually policy options, alternative courses of action or alternative strategies of intervention to solve or mitigate the problem (Bardach, 1996). In this section, I will endeavor to list all relevant policy, regulatory, and educational options that might help alleviate the problem of children needlessly being killed or receiving traumatic brain injuries in bicycle accidents. I will brainstorm, and use other ideas already in place in other states, to develop a list of alternatives to solving the problem of children's deaths from traumatic brain injuries received in bicycle accidents.

Bardach recommends always including in the first approach to the problem the alternative of "Take no action; let present trends continue undisturbed" (Bardach, 1996). As clearly stated previously, the alternative of taking no action to decrease the amount of traumatic brain injuries or deaths to American or Texas children is really not a reasonable policy alternative at all. Each year, an average of 400-600 American children and 18 Texas children will needlessly die from traumatic brain injuries as the result of allowing current trends to continue unabated.

Unfortunately, the Texas State Legislature has not passed four previous children's bicycle helmet bills. The most widely stated reason for not passing the bills is that legislators feel that Texas citizens will not stand for a bill that limits their freedom in deciding what is best for their children (P. Tyree, personal communication, December 4, 2001). However, I feel legislators can no longer ignore the mounting death toll of children who were not wearing bicycle helmets at the time of an accident. Doing nothing, for fear of alienating voters, is no longer a reasonable option.

The first alternative to “doing nothing” I will discuss is implementation of a statewide children's bicycle helmet law. Based on information gathered during the literature review phase, I believe a statewide children's bicycle helmet law has the potential to save 11-13 children's lives in year in the state of Texas alone. In addition to the lives saved, hundreds of thousands to millions of dollars could be saved in ED costs, inpatient care costs, rehabilitative costs, and insurance costs with the passage of a statewide children's bicycle helmet law.

An additional alternative is to make a greater effort to implement and enforce city ordinances in some of the larger Texas cities that have the most potential for child injuries. Currently in the state of Texas, Arlington, Austin, Dallas, Fort Worth and Houston the largest cities that have adult or children's bicycle helmet ordinances (Bicycle Helmet Safety Institute, 2001)

Another alternative is to comprehensively organize mandatory bicycle safety education programs that stress the importance of all aspects of bicycle safety, to include wearing reflective garments, appropriate signaling techniques, use of bicycle lights, and wearing bicycle helmets. Bicycling safety programs have proven successful in educating children about safe bicycle riding, though no direct links can be made to bicycle safety education programs and saved lives.

d. Select the Criteria

Criteria are the evaluative standards used to judge the goodness or beneficence of the projected policy outcomes associated with each of the alternatives. Bardach suggests that it helps to think of any policy story as having two interconnected but separate plot lines. The analytical plot line concentrates on facts and objective projections of consequences. The second plot line is the evaluative plot line. The evaluative plot line focuses on subjective value judgments. Bardach states that usually, all analytically sophisticated and open-minded persons should be able to agree on the rights and wrongs in the analytical plot. However, the evaluative

plot line deals with both subjectivity and social philosophy. Bardach places the step of "Select the Criteria" solely in the evaluative plot line. He feels it is the most important step for permitting values and philosophy to be brought into the policy analysis (Bardach, 1996).

Bardach also notes that the criteria used to evaluate the goodness of projected policy outcomes are not used to directly judge the alternatives. The criteria used for judgment are to be applied to the projected outcomes. Bardach believes that judging the projected outcomes compared to only judging the alternative gives the analyst greater freedom when looking for alternatives with a likelihood of producing desired outcomes. Bardach states that the most important criterion is that the projected outcome actually "solves the policy problem" to an acceptable degree. However, it is important to remember that any course of action is likely to impact the world in many ways. Some ways that the world is impacted may be desirable, and some are not. Each of these projected outcomes requires a judgment on our part of whether and why it is thought to be desirable. It is our set of criteria of evaluation that embodies such judgments (Bardach, 1996).

The criteria I will select for evaluating the goodness of solutions to the dilemma of children being killed or injured riding bicycles are taken from the book, Evaluating the Healthcare System: Effectiveness, Efficiency, and Equity, by Aday, Begley, Lairson, and Slater. I will evaluate each alternative for saving children's lives based on an analysis of the effectiveness, efficiency and equity of each alternative. I will evaluate each alternative for saving Texas children's lives under each criterion before moving to the next criterion. In an effort to provide a more quantitative measurement tool for the best alternative, based on Bardach's explanation of an evaluative plot line, I will construct a numerical/graphical representation of the subjective

scores I assign to each alternative listed under criteria listed by Aday et al. Scores will range from 0 being the worst to 10 being the best.

Evaluation with a Focus on Effectiveness: Evaluating the Healthcare System:

Effectiveness, Efficiency, and Equity, states that effectiveness can be broken into two definitions, the population perspective and the clinical perspective. The population perspective is the macrolevel view that considers the role of physical, social, and economic environments on the health of the population. The population perspective, also known as the epidemiology of health, focuses on the benefits from both medical and non-medical determinants of the health of the population, including environment, behavior, human biology and medical care. The clinical perspective focuses on the interactions of patients and providers in the medical care system and institutions and the resulting clinical improvement or health benefits achieved by patients (Aday, Begley, Lairson, and Slater, 1998). I will focus on the population perspective as it deals with the physical, social, and economic environments of the health of our Texas children.

Effectiveness Evaluation of Alternative One, “Take no action; let present trends continue undisturbed,” has proven to have no positive effectiveness on the health of Texas children who do not wear helmets while riding a bicycle. Allowing Texas children to continue to ride bicycles without wearing helmets will most likely continue to result in the death of anywhere from 11-13 Texas children annually from head injuries. **SCORE – 0.**

Effectiveness Evaluation of Alternative Two, “Implementation of a Texas Children’s Bicycle Helmet Law,” has great potential for being extremely effective at decreasing the amount of Texas children’s lives lost from head injuries received from bicycle accidents. As stated in the literature review, the use of bicycle helmets can decrease the likelihood of head injuries by 85 percent (Bicycle Helmet Safety Institute, 2001). Also, head injury is the primary or

contributing factor in 70-85 percent of bicycle related deaths (White and Spellicy, 1994).

Wearing helmets can substantially decrease the most common factor of bicycle related deaths, head injury. No other method of bicycle safety has proven more effective at reducing head injury and death than wearing helmets (State Legislature Fact Sheet, 2001). **SCORE – 10.**

Effectiveness Evaluation of Alternative Three, “Bicycle Helmet City Ordinances,” also has great potential for saving children’s lives, albeit at a smaller scale. As stated previously, Fort Worth, Dallas, and Austin are the largest cities in Texas that have enacted bicycle helmet ordinances. **SCORE – 7.**

Effectiveness Evaluation of Alternative Four, “Bicycle Safety Programs,” will have a positive effect on the number of accidents that bicyclists are involved in. Unfortunately, once involved in an accident, there are no further ways to protect the bicycle rider from traumatic head injury. **SCORE – 5.**

Other than Alternative One, “Take no action; let present trends continue undisturbed,” all other alternatives will be effective, some more so than others, at saving the lives of young Texas bicyclists. Based on subjective opinion, and a 10 on the scoring system, Alternative Two, “Implementation of a Texas Children’s Bicycle Helmet Law,” has the greatest potential for saving the most lives.

Evaluation with a Focus on Efficiency: The next criterion for analyzing the alternatives is the efficiency of the alternatives. Aday et al. state that for society as a whole, efficiency requires that the combination of goods and services with the highest attainable total value, given limited resources and technology, be produced. The requirement of efficiency pertains to both allocative and production efficiency. Allocative efficiency depends on the attainment of the “right” or most valued, mix of outputs. Allocative inefficiencies arise in healthcare delivery when

substantial resources are allocated to treatments of questionable effectiveness while proven preventive services are neglected. Production efficiency addresses whether resources are organized and managed in a manner that minimizes the cost of production (Aday et al., 1996). I will concentrate primarily on allocative efficiency as it applies to the use of bicycle helmets.

Efficiency Evaluation of Alternative One, “Take no action; let present trends continue undisturbed,” forces allocative inefficiencies. In spending over \$7.6 billion a year in U.S. health care dollars for treatment of persons involved in bicycle accidents and deaths (Casale and McCauley, 1996), we as a nation are robbing other patients and healthcare providers of much needed resources. As stated in the Introduction, the costs associated with each bicyclist death average \$231,357 (Children's Bicycle Safety Fact Sheet). Also as stated previously, the Family Caregiver Alliance Fact Sheet on Selected Head Injury Statistics states that in terms of acute care, the average hospital stay for a patient with a severe head injury is about 45 to 60 days at a cost of \$324,000 per person. The annual cost after the patient has left the hospital average \$125,000 per year. For an individual, the lifetime costs for care of a head injury survivor are estimated to be between \$4.1 million dollars and \$9 million dollars (Family Caregiver Alliance, 2001). Prevention of even one head injury patient can have tremendous benefits to society as a whole. We as a nation are spending limited healthcare dollars extremely unwisely by allowing forced, but preventable, inefficiencies to continue. **SCORE – 0.**

Efficiency Evaluation of Alternative Two, “Implementation of a Texas Children's Bicycle Helmet Law,” can be extremely efficient because it puts prevention into practice. Using the cost information above, if implementation of the Texas Children's Bicycle Helmet Law saved 11-13 lives a year, it could conceivably save almost \$3 million a year in death costs alone. Costs saved from preventing traumatic brain injuries, extended hospital stays, and long-term care

could result in tens of millions of dollars being reallocated for other preventive or treatment services. **SCORE – 10.**

Efficiency Evaluation of Alternative Three, “Bicycle Helmet City Ordinances,” achieves the same allocative efficiencies at a smaller city-wide scale. **SCORE – 6.**

Efficiency Evaluation of Alternative Four, “Bicycle Safety Programs,” can achieve efficiencies in that education is a great form of prevention. Any prevented bicycle accident injuries or deaths can save money to be used in other social areas. **SCORE – 4.**

Based on the brief study of the efficiencies of the four alternatives, Alternative Two, “Implementation of a Texas Children's Bicycle Helmet Law,” is the clear winner. Again, mandating a children's bicycle helmet law scores a 10 on the grading system.

Evaluation with a Focus on Equity: The last area of evaluation of the alternatives is the equity of each alternative. Aday et al. write about the distinctions between the individual and community perspectives of equity in a discussion of liberal and communitarian values. Contrary to traditionally held liberal beliefs advocating government programs for social programs such as affirmative action or and public housing (<http://uspolitics.org/idealog/Figure1-2.htm>); Aday et al. state that the liberal political tradition focuses on the norms of personal well being and individual freedom. Policies grounded in the liberal political tradition have been concerned with protecting or assuring individual rights. The question of equity posed from this point of view is, What can I justly claim? On the other hand, communitarian sentiments are based on norms of the common good, social solidarity, and protection of the public welfare. Rather than focusing on assuring rights or benefits to individuals, communitarianism encompasses a broader consideration of public health and the social and economic interventions required to enhance the well-being of groups or communities as a whole. The essential question of justice from the communitarian

perspective is, What's good for us (Aday et al., 1996)? I will focus on both the liberal and the communitarian prospectives in evaluating the equity of each alternative.

Equity Evaluation of Alternative One, "Take no action; let present trends continue undisturbed," is the ultimate policy for the liberal political tradition. Letting present trends continue undisturbed requires individuals, both Americans in general and Texans, to continue to exercise their individual freedom in determining whether or not their children will be required to wear a bicycle helmet. Alternative one loses from a communitarian perspective because it does not focus on the health and well-being of the society as a whole. With two such polarized views of the benefits of Alternative One, I will grade Alternative as a tie between the liberal and communitarian perspectives. **SCORE – 5.**

Equity Evaluation of Alternative Two, "Implementation of a Texas Children's Bicycle Helmet Law," obviously fails miserably from the liberal political standpoint. Anytime the Government weighs in on a subject that has traditionally been left in the individual's domain, fears of Socialism and Communism often surface. However, when looking at a mandated bicycle helmet law from the communitarian perspective, one notes the overall benefit to society that can result. Young children's lives can be saved, or at least injuries mitigated, from enforcing a mandated Texas Children's Bicycle Helmet Law. Again, it appears with two such polarized views that evaluation of Alternative Two is a tie. **SCORE – 5.**

Equity Evaluation of Alternative Three, "Bicycle Helmet City Ordinances," scores well from a communitarian perspective, although not as well as Alternative Two. Alternative Three does not score real well from a liberal perspective. **SCORE – 4.**

Equity Evaluation of Alternative Four, "Bicycle Safety Programs," also scores positively from the both the liberal and communitarian perspective because it does not force

parents to ensure their children have to wear helmets, merely that they receive education about bicycle safety. **SCORE – 8.**

Alternative Two, “Implementation of a Texas Children’s Bicycle Helmet Law,” is the winner from the communitarian point of view, while Alternative One, “Take no action; let present trends continue undisturbed,” is the winner from the liberalist reference point.

Appendix A shows a detailed grid of the scoring for each alternative to the current situation in Texas of no bicycle helmet ordinances at the state level. Based on the subjective scoring grid, Alternative Two, “Implementation of a Texas Children’s Bicycle Helmet Law,” is by far the superior alternative. Alternative Two is superior because it scores the highest average on a 0 – 10 scale, meaning that it is the most effective, efficient, and equitable of the four alternatives.

e. Project the Outcomes

The next step in Bardach’s eight steps of policy analysis is to project the outcomes. Bardach states for each alternative previously developed, outcomes or impacts should be projected that might have an impact, either positively or negatively, on choosing to implement a particular alternative. Bardach states that two areas to concentrate on in projecting the outcomes are to attach magnitude estimates to the projected outcome and to systematically review all possible adverse scenarios in an effort to counter-bias against natural optimism (Bardach, 1996).

Projected outcomes for many of the alternatives have already been stated, however, I will provide more in-depth projected outcomes and concentrate more thoroughly on possible adverse scenarios.

Alternative One Projected Outcomes: Alternative One, “Take no action; let present trends continue undisturbed,” has fairly predictable projected outcomes. As stated previously, approximately 18 children die on Texas highways and roads each year in bicycle accidents. The

literature review tells us that head injury is the most common cause of death and serious disability in bicycle-related crashes are involved in about 60-80 percent of the deaths (Centers for Disease Control and Prevention, 2001). Therefore, head injury is most likely the cause of up to 14 of the deaths of Texas children.

Alternative Two Projected Outcomes: Alternative Two, "Implementation of a Texas Children's Bicycle Helmet Law," has many potential projected outcomes, both good and bad. The most positive projected outcome is obviously that children's lives will be saved. As stated previously, bicycle helmets are 85-88 percent effective in mitigating head and brain injuries (State Legislature Fact Sheet, 2001). If 85-88 percent of the head injuries mentioned in the preceding paragraph can be avoided, it is possible that 11-13 of those 14 deaths caused by head trauma can be avoided. In addition to the lives saved, anguish and severe long-term disabilities resulting from traumatic brain injury can be avoided by other Texas children who do live through the initial accident.

There may also be some projected outcomes that can be perceived as less than positive. Some studies indicate a noticeable decline in the number of children who use a bicycle after the passage of a mandatory helmet law. The Henderson Bicycle Helmet Study, conducted by Dr. Michael Henderson of Australia reports that bicycle use did decline in some areas. Mandatory helmet laws in Melbourne, Australia, ushered in dramatic decreases in bicyclist deaths and head injuries during the early 1990's. Henderson reports that after passage of a helmet law in 1990, the number of bicyclists killed or admitted to a hospital with a head injury decreased and by 1991/1992, there were 66 percent fewer injuries than the year before the helmet law. In addition, there was also a 17 percent decrease in serious injuries other than to the head during the same time period. Henderson does admit that a reduction in bicycle use

may have lead to a portion of the decrease in the number of severely injured bicyclists with injuries other than to the head, and some of the reduction to bicyclist with injuries to the head. Henderson reports that observational studies showed that bicycle use among teenagers had decreased by 43 percent by 1991 and 45 percent compared to bicycle use in 1990 when a mandatory helmet law was passed. Bicycle use in children that were 5-11 years old decreased 3 percent in 1991 and 11 percent in 1992, compared to pre-law levels in 1990. There was, however, an increase in adult cycling. Overall, for all age groups, the total bicycle usage in 1991 was 9 percent higher than in 1987/1988 and a total of 12 percent higher by 1992 (Henderson, 1995).

The decline in bicycling by children can have negative effects on the health of children overall. The Bicycling in Austin, TX, website quotes a study that states, "The benefits of cycling, even without a helmet, have been estimated to outweigh the hazards by a factor of 20 to 1 (<http://bicycleaustin.com/laws-mho.html>).

Lastly, some opponents to bicycle helmet laws argue that some minorities may be unfairly singled out. In reference to a bicycle helmet ordinance in Austin, the Bicycling in Austin website states that before the council made the helmet law kids-only, 70 percent of no-helmet tickets given to kids were given to black & Hispanic kids. After the helmet law was made kids-only, to date (1-99) that figure has jumped to 92 percent (<http://bicycleaustin.com/laws-mho.html>).

In addition to the perceived negative outcomes for a mandatory helmet law, the expense of helmets also becomes an issue. Using the estimate of nearly one million Texas children bicyclists between the ages of 5 and 14 (Texas Department of Health Safe Riders Program, 2001), and a cost of approximately \$10 dollars per helmet; the estimated cost to put on helmet

on every Texas child cyclist between the ages of 5 and 14 is \$10,000,000 dollars. Fortunately, funding can come from a variety of sources. A portion of the funding could come from Texas state-run programs, a portion could come from city-run programs, and a portion can come from the parents or guardians of the children bicyclists.

Similar outcomes can be projected for Alternative Three, "Bicycle Helmet City Ordinances." However, some opponents will argue that a relatively small number of lives saved in a metropolitan city such as Dallas, TX, or San Antonio, TX, are not significant compared to the perceived negative outcomes of potentially fewer bicycle riders and the potential of a disparate number of minority riders being stopped for not wearing helmets. Alternative Four, "Bicycle Safety Programs," is more difficult to project outcomes for.

f. Confront the Tradeoffs

Bardach states that often times in policy analysis one of the policy alternatives being considered will potentially produce a better outcome in every evaluative criterion compared to the other policy alternative outcomes. When this happens, there are no tradeoffs among the alternatives and the winning alternative had "dominance." However, more often than not there is no single alternative that is clearly a winner and tradeoffs must be made. Bardach states that the most common tradeoff to be made is that between money and a good or service received by a portion of the population (Bardach, 1996).

In the tradeoff confrontation between mandating a children's bicycle helmet law, be it state-wide or a city ordinance, I consider the tradeoffs to be more ideological. The primary tradeoff I see is that of children's lives and the perceived government encroachment on individual rights. The secondary tradeoff I see is between children's lives and the fear that children will ride

bicycles less or that minorities will be unfairly targeted. Lastly, I see a tradeoff between children's lives and money.

In analyzing the tradeoffs, it is apparent that the ideological tradeoffs between saving children's lives and government infringement or children riding bicycle less are hard to quantifiably measure. I believe the absolute knowledge that children's lives will be saved is inherently better for society than the perception of unfavorable government infringement or the decrease of children riding bicycle because of the inconvenience, either physically or monetarily, of riding bicycle with a helmet on.

Bardach states that many policy proposals sometimes break down to an implicit trade off between dollars and the risk to life. Basically, in order to assess these proposals we are forced to actually "decide what a human life is worth." Bardach states that this task is made easier by working with quantitative estimates and break-even analysis. The scenario that Bardach uses is the consideration of whether or not to impose a new auto design standard on the industry that will save an estimated 25 lives per year through improved safety. The cost of implementing the standard is \$50 million annually. Therefore, the tradeoff is 2 million dollars per life saved (Bardach, 1996).

Applying that same logic to the bicycle helmet policy analysis in the state of Texas provides the following scenario that opponents to a bicycle helmet law might use. As stated previously, approximately 1 million children ride bicycles in the state of Texas. If a bicycle helmet law was passed and all one million child bicyclists needed helmets, the initial cost to Texas may be \$10 million dollars at \$10 dollars a helmet. Future annual costs would be much less because only new child bicyclists would need helmets. If 13 lives were saved that first year, the cost per life saved would be approximately \$769,230,285. Each following year the cost would be less.

Applying that same logic to the number of Texas children who received traumatic brain injuries in 1998, 124, and the result is only \$80,645 per traumatic brain injury saved.

Remember that for an individual, the lifetime costs for care of a head injury survivor are estimated to be between \$4.1 million dollars and \$9 million dollars (Family Caregiver Alliance, 2001). That \$80,645 spent to save one traumatic brain injury saves \$4.1 million dollars to \$9 million dollars over that child's lifetime.

However, there are many funding sources for bicycle helmets. Funding may come from state and local government programs, state and local private programs, and individual parent/legal guardians. I believe the proper way to look at the cost of a Texas Children's Bicycle Helmet Law is at the individual level. Is \$10 dollars too much for an insurance policy that will dramatically decrease the likelihood of my daughters suffering traumatic brain injuries or being killed in bicycle accident?

Several local charities such as the Safe Kids Foundation and the Southwest Texas Advisory Council for Trauma have given away hundreds of child helmets throughout the past several years.

g. Decide!

Bardach states that this step is a check on how well the policy analysis has been done to this point. Bardach states that if we can't decide on a proper course of action, the analysis may have a flaw in one or several areas. Perhaps the tradeoffs weren't sufficiently clarified, or perhaps not enough alternatives were developed. Implementation problems may not have fully explored or cost estimates may still be too uncertain. Bardach states that unless we can convince ourselves of the proper course of action, we probably cannot convince our client or a policy making body (Bardach, 1996).

As has become evident throughout the narrative of the policy analysis, I believe that development of and implementation of a Texas Children's Bicycle Helmet Law, in conjunction with organized bicycle safety programs, is the most logical and effective means of preventing Texas children's needless deaths or traumatic brain injuries. The simple act of ensuring children wear bicycle helmets has the potential of saving 11-13 Texas children's lives each year.

h. Tell Your Story

Bardach states that after going through the previously listed policy analysis steps that may have forced you to redefine your problem, rethink your alternatives, reconsider your alternatives, reassess your projections, and reevaluate your alternatives, you are ready to tell your story (Bardach, 1996). After completion of Bardach's policy analysis steps, I'm more convinced than ever that enactment of a Texas Children's Bicycle Helmet Law will be the most effective way to mitigate the number of traumatic brain injuries and deaths for Texas children who are injured riding bicycles. The best way to tell my story is to engage local politicians and child advocacy groups in the battle of passing a helmet bill.

4. CONCLUSIONS AND RECOMMENDATIONS

As stated previously, the purpose of this GMP was to step through the entire policy making process as it applies to developing a Texas children's bicycle helmet bill. I determined that a complete, statewide children's bicycle helmet law will be the best way to prevent 11-13 children's deaths each year. I determined a statewide children's bicycle helmet law will be most beneficial based on the literature research of other countries and states that have implemented laws, and my subjective scoring grid comparing a statewide bicycle helmet law to: 1) no change, 2) city ordinances, and 3) bicycle safety training programs. In determining that implementing a Texas children's bicycle bill is the best way to improve children's bicycle riding safety, my goal

is now to prepare a Texas children's bicycle helmet bill for presentation to the Texas State Legislature in 2003.

Appendix 2 is an initial draft of a proposed children's bicycle helmet bill. The draft bill is a compilation of a children's bicycle helmet bill sponsored by Representative Bill Carter in 1999 and a portion of the original House Bill 2203 that meet the 2001 Texas State Legislature. Representative Carter's bill, House Bill 673, was not passed into law and before House Bill 2203 was passed into law in the 2001 Legislature, any language pertaining to a bicycle helmet law had to be deleted.

After drafting a bill, the next step in getting a bill through any state legislative session is to begin building local and state support the bill. I have been in contact with the Texas Department of Health, the Texas Bicycle Coalition, the Texas Department of Insurance, and the San Antonio Safe Riders Association and received help and offers of support from each agency. State-Senator Van de Putte has offered to be the primary sponsor for the bill from the state-senators side and State-Representative Elizabeth Ames Jones is a likely candidate for sponsorship on the state-representative side.

Appendix A – Scoring Grid

Grading Criterion	Alternative One	Alternative Two	Alternative Three	Alternative Four
Effectiveness	0	10	7	5
Efficiency	0	10	6	4
Equitability	5	5	4	8
Average Score	1.67	8.33	5.67	5.67

Appendix B – Proposed Texas Children's Bicycle Helmet Bill

A BILL TO BE ENTITLED AN ACT

Relating to requiring the use of protective helmets for bicycle safety; providing criminal penalties.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

SECTION 1. Section 758.001, Health and Safety Code, is amended to read as follows:

Sec. 758.001. DEFINITIONS. In this chapter:

- (1) "Bicycle" means a human-powered vehicle with two wheels in tandem designed to transport by a pedaling action of a person seated on a saddle seat.
- (2) "Department" means the Department of Public Safety.
- (3) "Operator" means a person who travels by pedaling on a bicycle seated on a saddle seat.
- (4) "Other public right-of-way" means any right-of-way, other than a public roadway or public bicycle path that is accessible by the public and designed for use by vehicular or pedestrian traffic.
- (5) "Protective bicycle helmet" means headgear that meets or exceeds the impact standards for protective bicycle helmets set by the United States Consumer Product Safety Commission, the Snell Memorial Foundation, or an appropriate state agency.
- (6) "Public bicycle path" means a right-of-way under the jurisdiction and control of this state or a local political subdivision for use primarily by bicycles or by bicycles and pedestrians.
- (7) "Public roadway" means a right-of-way under the jurisdiction and control of this state or a local political subdivision for use primarily by motor vehicles.

SECTION 2. Section 758.002(a), Health and Safety Code, is amended to read as follows:

- (a) The department may establish and administer a statewide bicycle safety education program and may adopt rules to implement the program. The program must include instruction concerning:
- (1) the safe handling and use of bicycles;
 - (2) high risk traffic situations;
 - (3) bicycle and traffic handling skills;
 - (4) on-bike training;
 - (5) correct use of protective bicycle helmets; and
 - (6) traffic laws and regulations.

SECTION 3. Section 758.003(b), Health and Safety Code, is amended to read as follows:

- (b) The fund may be used by the department only to:
- (1) defray the costs of administering this chapter;
 - (2) provide a bicycle training course for a child younger than 10 years of age who comes from a low income family; and
 - (3) if funding permits, assist children from low income families in purchasing protective bicycle helmets.

SECTION 4. Chapter 758, Health and Safety Code, is amended by adding Sections 758.004, 758.005, 758.006, 758.007, 758.008, and 758.009 to read as follows:

Sec. 758.004. REQUIREMENTS FOR PROTECTIVE BICYCLE HELMET USE.

- (a) This section applies to the use of a bicycle on a public roadway, public bicycle path, or other public right-of-way.

- (b) A person younger than 16 years of age who is an operator or passenger on a bicycle shall wear a properly fitting protective bicycle helmet fastened securely on the head with the straps or other appropriate fastener of that helmet.
- (c) A parent or legal guardian of a person younger than 16 years of age may not knowingly or recklessly permit the person to operate a bicycle or to be a passenger on a bicycle unless the person is wearing a protective bicycle helmet as prescribed by

Subsection (b).

SECTION 5. SALE OR RENTAL OF BICYCLES.

- (a) A person regularly engaged in the business of selling bicycles shall provide to each purchaser a written explanation of the requirement under Section 758.004 that a person wear a protective bicycle helmet.
- (b) A person may not rent a bicycle to another person unless:
 - (1) each person who the person renting the bicycle knows will be an operator or passenger on the bicycle possesses a properly fitting protective bicycle helmet at the time the bicycle is rented; or
 - (2) the rental agreement includes the provision of a properly fitting protective bicycle helmet for each operator or passenger.
- (c) A person who sells bicycles is not liable in civil damages for:
 - (1) the failure to provide the written explanation of the law as required by Subsection (a); or
 - (2) a bicycle operator's or passenger's failure to wear a protective bicycle helmet.
- (d) A person who rents bicycles to another in compliance with Subsection (b) is not

liable in civil damages for a bicycle operator's or passenger's failure to wear a protective bicycle helmet.

(e) The governing body of a municipality or the commissioners court of a county may adopt an ordinance or order under the Health and Safety Code; and the county or municipality has adopted a program to:

(1) provide children younger than 16 years of age from low-income families with bicycle helmets; or

(2) work with a civic or other organization to provide bicycle helmets to children younger than 16 years of age from low-income families.

SECTION 6. CIVIL OFFENSE.

(a) A person commits an offense if the person violates Section 758.004 or 758.005.

(b) An offense under this section is a civil offense punishable by a fine of \$25, unless the actor has been convicted previously under this section, in which event an offense under this section is a civil offense punishable by a fine of \$50.

(c) A court may waive the fine imposed under this section for a violation of Section 758.004 if it is the person's first offense and the person presents proof to the court that the person did not have a protective bicycle helmet at the time of the violation but has since purchased or obtained a protective bicycle helmet.

SECTION 7. FINES.

The custodian of the county treasury shall keep a record of the amount of the fines collected under Section 758.006 and, on or before the last day of the month following each calendar quarter, remit to the comptroller the amount of the fines collected under Section 758.006 in the preceding quarter. The custodian of the county treasury may retain half of the

finer collected under Section 758.006 and the interest on the retained fines as a service fee if the custodian of the treasury keeps records of the amount of fines on deposit collected under Section 758.006 and remits the appropriate amount to the comptroller within the period prescribed by this section. The comptroller shall deposit the amounts remitted under this section in the bicycle safety fund established under Section 758.003.

SECTION 8. LOCAL REGULATION.

This section does not preempt a local regulation of the use of bicycle helmets or affect the authority of a political subdivision to adopt or enforce an ordinance or requirement relating to the use of bicycle helmets if the regulation, ordinance, or requirement is compatible with and equal to or more stringent than this chapter.

SECTION 9

The Department of Public Safety shall adopt rules to implement this section.

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